collimating lens (L1) is realized by an optical element selected from the group consisting of a refractive lens, a HOE, a CGH, other type of DOE, a grin lens, and one or more zone plate(s).

Claim 74 (previously presented): The laser beam producing system of claim 72, wherein each said DOE is realized by an optical element selected from the group consisting of a HOE, a computer-generated hologram (CGHs), and a surface-relief hologram.

Claim 75 (previously presented): The laser beam producing system of claim 72, wherein a total beam-shaping factor of the laser beam producing system is defined by $M=M_1M_2$, wherein M_1 is the magnification factor of said DOE D_1, and M_2 is the magnification factor of said DOE D_2, and wherein said total beam-shaping factor for the laser beam producing system is less than unity ~~(1)~~, that is $M1*M2<1$, and the laser beam leaving said DOE D_1 and said DOE D_2 is compressed in one dimension.

Claim 76 (previously presented): The laser beam producing system of claim 72, wherein each of said DOEs is realized by an optical element selected from the group consisting of a HOE, a CGH, and a surface-relief hologram.

Claim 77 (previously presented): The laser beam producing system of claim 72, wherein said focusing lens (L2) is realized by an optical element selected from the group consisting of a refractive lens, holographic optical element (HOE), diffractive optical element (DOE), grin lens, and zone plate(s).

Claims 78-83 (canceled)

Claim 84 (previously presented): A laser beam producing system comprises:

a visible laser diode (VLD), for producing a laser beam from its junction;

a collimating lens (L1) for collimating the laser beam as it is transmitted through collimating lens L1 and through the system in a P-incident manner;

a fixed spatial-frequency diffractive optical element (DOE) denotable by D1;

a fixed spatial-frequency diffractive optical element (DOE) denotable by D2; and

a focusing lens (L2) disposed between DOE D1 and DOE D2 and adjustably translatable along its optical axis during the alignment stage of the system assembly process for focusing the output laser beam to some point in space.

Claim 85 (previously presented): The laser beam producing system of claim 84, wherein said collimating lens (L1) is realized by an optical element selected from the group consisting of a refractive lens, a HOE, a CGH, other type of DOE, a grin lens, and one or more zone plate(s).

Claim 86 (previously presented): The laser beam producing system of claim 84, wherein each said DOE is realized by an optical element selected from the group consisting of a HOE, a computer-generated hologram (CGHs), and a surface-relief hologram.

Claim 87 (previously presented); The laser beam producing system of claim 84, wherein each of said DOEs is realized by an optical element selected from the group consisting of a HOE, a CGH, and a surface-relief hologram.

Claim 88 (previously presented): The laser beam producing system of claim 84, wherein a total beam-shaping factor for the laser beam producing system is defined by $M=M_1M_2$, wherein M_1 is the magnification factor of said DOE D_1, and M_2 is the magnification factor of said DOE D_2, and wherein the total beam-shaping factor for the laser beam producing system is greater than unity, that is M1*M2>1, and ~~thus~~ the laser beam leaving said DOE D_1 and said DOE D_2 is expanded in one dimension.

Claim 89 (previously presented): The laser beam producing system of claim 84, wherein said focusing lens (L2) is realized by an optical element selected from the group consisting of a refractive lens, holographic optical element (HOE), diffractive optical element (DOE), grin lens, and zone plate(s).

Claims 90-113 (cancelled)

Claim 114 (new): A laser beam production module for producing a laser beam having a controlled beam aspect-ratio, a minimized (or reduced to zero) beam dispersion, and corrected

astigmatism, said laser beam producing module comprising:

a module housing;

a visible laser diode (VLD), mounted within said module housing, for producing a laser beam from its junction typically having divergent and elliptical beam characteristics;

a collimating lens (L1), mounted in said module housing, for collimating the laser beam as it is transmitted through said collimating lens L1 and through components in said module;

a fixed spatial-frequency diffractive optical element (DOE), mounted in said module housing, and denotable by D1 having a beam expansion factor M1; and

a fixed spatial-frequency diffractive optical element (DOE), mounted in said module housing, and denotable by D2, having a beam expansion factor M2,

wherein the collimated laser beam exiting said collimating lens L1 is transmitted through said DOE D1, and the collimated laser beam exiting said DOE D1 is transmitted through DOE D2, and the collimated laser beam exiting said DOE D2 exits having a controlled beam aspect-ratio, a minimized (or reduced to zero) beam dispersion, and corrected astigmatism.

Claim 115 (new): The laser beam producing module of claim 114, wherein said collimating lens (L1) is realized by an optical element selected from the group consisting of a refractive lens, a HOE, a CGH, other type of DOE, a grin lens, and one or more zone plate(s).

Claim 116 (new): The laser beam producing module of claim 114, wherein each said DOE is realized by an optical element selected from the group consisting of a HOE, a computer-generated hologram (CGHs), a surface-relief hologram, and other diffractive optical element.

Claim 117 (new): The laser beam producing module of claim 114, wherein said laser beam is transmitted through said collimating lens L1 and through said module in a S-incident manner; and wherein the total beam-shaping factor (M=M1M2) for the laser beam producing module is less than unity (1), that is M1*M2<1, and the laser beam leaving said collimating lens (L1) is compressed in one dimension, and has a circularized beam aspect-ratio, minimized (or reduced to zero) beam dispersion, and corrected astigmatism.

Claim 118 (new): The laser beam producing module of claim 117, wherein said collimating lens (L1) is realized by an optical element selected from the group consisting of a refractive lens, a HOE, a CGH, other type of DOE, a grin lens, and one or more zone plate(s).

Claim 119 (new): The laser beam producing module of claim 117, wherein each said DOE is realized by an optical element selected from the group consisting of a HOE, a computer-generated hologram (CGHs), a surface-relief hologram, and other diffractive optical element.

Claim 120 (new): The laser beam producing module of claim 114, wherein said laser beam is transmitted through said collimating lens L1 and through said module in a P-incident manner; and wherein the total beam-shaping factor (M=M1M2) for the laser beam producing module is greater than unity (1), that is M1*M2>1, and thus the laser beam leaving said collimating lens (L1) is expanded in one dimension and has a circular beam aspect-ratio, and has a circularized beam aspect-ratio, minimized (or reduced to zero) beam dispersion, and corrected astigmatism.

Claim 121 (new): The laser beam producing module of claim 120, wherein said collimating lens (L1) is realized by an optical element selected from the group consisting of a refractive lens, a HOE, a CGH, other type of DOE, a grin lens, and one or more zone plate(s).

Claim 122 (new): The laser beam producing module of claim 120, wherein each said DOE is realized by an optical element selected from the group consisting of a HOE, a computer-generated hologram (CGHs), a surface-relief hologram, and other diffractive optical element.